

s.n. 10/644,748

Page 18

### REMARKS

#### Claims Amendments

The claims have been amended for clarification purposes. In particular, claims 13, 35, 49, 53, 60 and 63 have been amended to clarify that it is the directional drilling means that is being operated by a rotary table or top drive system, as is known in the art. Further, claims 19, 40 and 63 have been amended to include gases and combinations of drilling mud, drilling fluid and gases. Support can be found, for example, on page 5, paragraph 6, and on page 6, paragraph 4.

#### Double Patenting

Claims 1-65 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18, 20-41, 43-50, 53, 54, 56-58 of co-pending Application No. 10/644,749.

Applicant encloses hereto for filing an executed Terminal Disclaimer to Obviate a Provisional Double Patenting Rejection Over a Pending "Reference" Application (U.S. Application No. 10/644,749). U.S. Application No. 10/644,749 and the present application are commonly owned by PressSol Ltd.

#### Claims Rejections – 35 USC § 102

Claims 1-2, 4, 12, 14, 15, 18, 22, 24, 43, 44, 50 and 52 were rejected under 35 U.S.C. 102(2) as being anticipated by Lee (U.S. 1,850,403). Such rejection is respectfully traversed for the following reasons.

Independent claims 1, 2, 44, 50 and 52 have been amended to more clearly define the particular embodiment of the invention sought to be protected by them. In particular, each of the claims has been amended such that it is clear that in these embodiments the exhaust drilling medium (and hence entrained drill cuttings) is removed via the annulus (in the case of claim 44) or either of the annulus or inner pipe (claims 1, 2, 50 and 52) to the surface of the wellbore by means of the annulus or inner pipe. Thus, the exhaust drilling medium and cuttings are substantially contained within the concentric drill string until they reach the surface of the

s.n. 10/644,748

Page 19

wellbore. Therefore, drill cuttings and other materials are not pushed between the outside of the concentric drill string and the wellbore wall, which would damage the formation and result in a loss of production.

Lee does not teach a drilling method which uses a concentric drill string which removes exhaust drilling medium (and drill cuttings) through either the annulus or inner pipe to the surface of the wellbore so that the exhaust drilling medium and drill cuttings are contained within the concentric drill string until reaching the surface of the wellbore. Instead, as taught on page 6, line 127 to page 7, line 2, the "exhaust of the power element from the motor and the cylinder 21 is conveyed through the flexing units A around the flexible tube 1 up to and out of the perforations 5, in the connection 3, and into the housing 6 around the drill stem tube 2" [emphasis added]. This is clearly shown in both Figure 4 and in Figure 34 (which shows a vertical section of a well or deflecting housing; see page 2, lines 40-41), and is described on page 2, lines 60-68 as follows:

The drill stem tubing 2 will extend down from the top of the well to the flexing units A. A joint 3 is interposed between the drill stem tubing 2 and the first flexing joint A. The joint 3 has a swivel connection 4 with the tube 2 and is screwed to the first flexing joint or unit A. The joint 3 is provided with perforations 5 for the escape of the exhaust power element from the drill bit motor and other working parts. [Emphasis added]

Thus, it is respectfully submitted that Lee does not teach a concentric drill string that removes exhaust drilling medium and entrained drilling cuttings to the surface of the wellbore. Rather, Lee discloses that the exhaust drilling medium (*i.e.*, exhaust power element) escapes into the wellbore via perforations 5 in joint 3, which joint 3 attaches single walled drill stem 2 extending down from the top of the well to the flexing units A [see page 2, lines 60-62]. Thus, if drilling is performed using the Lee invention in a well that is not cased or only partially cased one can expect significant damage to be done to the formation walls.

In summary, the particular embodiments of the invention in claims 1, 2, 44, 50 and 52 are clearly patentably distinguishable over Lee. Thus, claims which depend on any of these claims, namely, 4, 12, 14, 15, 18, 22 and 24 which depend on claims 1 and 2 are also not anticipated by

s.n. 10/644,748

Page 20

this prior art reference. It should be noted that claim 43 was cited by the Examiner as being anticipated by Lee. Claim 43 is dependent on claim 25 which claim was not cited as being anticipated by Lee. Further, Examiner failed to set out her objection to claim 43. Applicant requests clarification as to why claim 43 is rejected or that such rejection be withdrawn.

Favorable reconsideration of claims 1-2, 4, 12, 14, 15, 18, 22, 24, 43, 44, 50 and 52 is respectfully requested.

Claims 1, 4-1, 5-1, 14, 25, and 44 were rejected under 35 U.S.C. 102(2) as being anticipated by Karlsson et al. (U.S. 5,148,875). Such rejection is respectfully traversed for the following reasons.

Independent method claims 1 and 44 have been amended to more clearly define the particular embodiment of the invention sought to be protected by them. In particular, both claims have been amended such that it is clear that in these embodiments of the present invention the exhaust drilling medium (and hence entrained drill cuttings) is primarily removed via the annulus (in the case of claim 44) or either of the annulus or inner pipe (in the case of claim 1). Thus, as mentioned above, the exhaust drilling medium and cuttings are substantially contained within the concentric drill string. Therefore, drill cuttings and other materials are not pushed between the outside of the concentric drill string and the wellbore wall, thereby minimizing damage to the formation.

Karlsson, on the other hand, does not teach containment of the drill cuttings, etc. within concentric drill string to minimize damage to the formation. In fact, Karlsson teaches away from containing returning drilling fluid in the concentric drill string. In particular, Karlsson states at column 8, lines 17-28, as follows:

As can be seen in FIG. 5E, drilling fluid (water) is pumped to motor 158 through drill pipe 52 and then leaves the inner drill string through bit nozzles as is common in the art, after which it returns to the surface primarily through the bore wall until it reaches the cemented in place casing string 70 where it travels between the I.D. of the casing string and the O.D. of the liner string. Part of the fluid returning to the surface does so through the interior 190 of the liner string due to the fact that

s.n. 10/644,748

Page 21

the liner is slotted for the purposes of subsequent gravel packing. [Emphasis added].

It is clear from the above that the method disclosed in Karlsson is not concerned with reducing damage to the formation by primarily containing the entrained drill cuttings in concentric drill string.

Thus, Karlsson teaches removing exhaust drilling medium primarily through the wellbore annulus between the liner and the wellbore (or between the casing and the liner) whereas the embodiments of claim 1 and claim 44 are directed towards a method where the exhaust drilling medium is primarily removed either through the annulus or inner pipe of the concentric drill string.

In summary, the particular embodiments of the invention as claimed in claims 1 and 44, are clearly patentably distinguishable over Karlsson. Thus, claims that depend on either of these two claims, namely, claims 4-1, 5-1, and 14, which depend on claim 1, are also not anticipated by this prior art reference.

Claim 25 has been amended to include all of the limitations of claim 27, which claim was not cited as being anticipated by Karlsson. Claim 27 has been canceled. Thus, it is respectfully submitted that claim 25 is no longer anticipated by Karlsson.

Favorable reconsideration of claims 1, 4-1, 5-1, 14, 25, and 44 is respectfully requested.

Claim Rejections – 35 U.S.C. 103

Claims 22 and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson ('875) in view of Sinclair et al. ('515).

Claim 22 is dependant on method claims 1 and 2 and claim 43 is dependent on apparatus claim 25. As stated above, Karlsson does not teach a drilling method whereby the exhaust drilling fluid and drill cuttings are primarily removed via the annulus or inner pipe of concentric drill string. Neither does Sinclair. Thus, modifying Karlsson by adding a suction compressor to help remove cuttings from a drill string as taught by Sinclair would not result in the invention as

s.n. 10/644,748

Page 22

claimed in claim 22. The compressor would not be removing the majority of the cuttings because in Karlsson the majority of the cuttings are not traveling through the drill string.

Claim 43 is dependent on claim 25. As discussed above, claim 25 has been amended to include the limitations in claim 27. Neither Karlsson nor Sinclair teaches these limitations. Thus, modifying Karlsson with a suction compressor as taught in Sinclair would not result in the invention as claimed in claim 43.

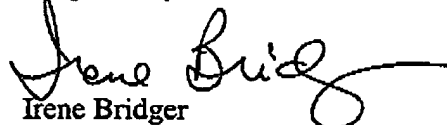
Favorable reconsideration of claims 22 and 43 is respectfully requested.

New Claims

New independent claim 65 is directed to a method for drilling a directional or horizontal wellbore in a hydrocarbon formation comprising delivering drilling medium through the annulus of the concentric drill string and removing exhaust drilling medium by extracting the exhaust drilling medium through the inner pipe. None of the prior art cited by the Examiner teach such a method. Thus, favorable consideration of this claim is requested.

In view of the arguments presented by Applicant herein, Applicant submits that claims 1 to 65 are in a condition for allowance and such allowance is respectfully requested.

Respectfully submitted,

  
Irene Bridger  
Registration No. 53,914

Dated: April 10, 2006

Bennett Jones LLP  
4500 Bankers Hall East  
855 2<sup>nd</sup> Street SW  
Calgary, Alberta T2P 4K7  
(403) 298-3661